

Quality of Service (storage standards)

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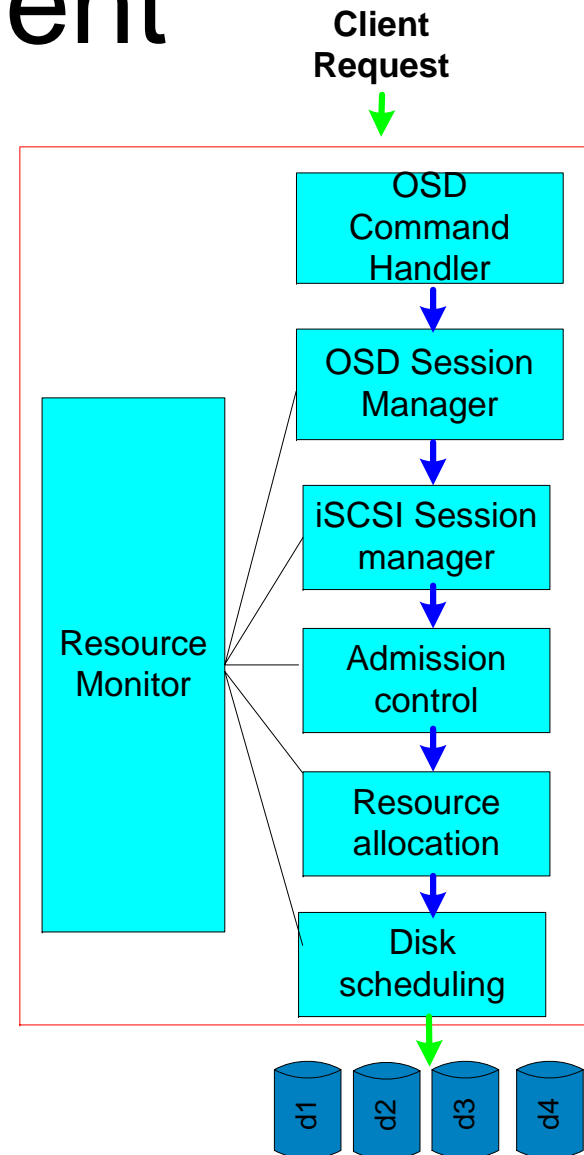
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Quality of Service w/ Objects

- **Considered in SNIA OSD Technical Work Group**
 - Early discussions within the committee, join us
 - always looking for more input from applications & users
 - Measures – bandwidth, delay, jitter, errors, others?
 - Object-level QoS – possible with attributes in OSD-1
 - Collection-level QoS – multi-object processing w/ attrs
 - Session-level QoS – need to add back OPEN/CLOSE ops
 - Per-operation QoS – very fine-grained
 - May want to add network-level QoS (e.g. via iSCSI)
- QoS will not be part of OSD-2, vendor extensions possible
- Join the discussion:
 - www.snia.org/apps/org/workgroup/osd/

OSD QoS Enforcement

- Session Mangers manage QoS for their respective domain (OSD or iSCSI)
- Admission control sets overall command priorities
- Resource allocation determines disk usage and paths to use
- Disk Scheduling orders individual disk read/write commands to block devices



OSD-2 Features

- **Proposals currently being finalized in the committee @ SNIA**
- **ANSI T10 ratification in late 2007 & early 2008**
- **TWG co-chairs**
 - Julian Satran, IBM
 - Sami Iren, Seagate
- **Major additions**
 - Snapshots
 - Enhanced exception mgmt
 - Enhanced security
 - Multi-object ops (inc. QUERY)
 - Alignment & padding
 - Space reservations
 - Range-based FLUSH
 - CLEAR, PUNCH
- **Additional ongoing discussions**
 - XAM to OSD mapping; QoS; dev-to-dev comm

Additional SNIA TWGs

- **Green Storage TWG**
 - metrics & measures for energy & cooling
 - www.snia.org/apps/org/workgroup/greentwg/
 - (SNIA members ok, universities free sign-up)
- **IO Traces, Tools, Analysis TWG (IOTTA)**
 - www.snia.org/apps/org/workgroup/iottawg/
 - (SNIA members ok, universities free sign-up)
- **Storage Developer Conference**
 - www.storage-developer.org
 - 10-13 September 2007 in San Jose
 - keynotes, technology, tutorials